QUARTERLY REPORT NO. 15
FOR
ANALOG-TO-DIGITAL CONVERTER
CONTRACT NO. N00014-87-C-0314
1 October 1991—31 December 1991

ARPA Order Number:	7356
Program Code Number:	7220
Amount of Contract:	$3,152,507
Name of Contractor:	Texas Instruments Incorporated 13500 N. Central Expressway P.O. Box 655936, M.S. 105 Dallas, Texas 75265
Effective Date of Contract:	30 March 1987
Contract Expiration Date:	30 May 1992
Contract Number:	N00014-87-C-0314
Program Manager:	W.R. Wisseman (214) 995-2451
Principal Investigator:	Frank Morris (214) 995-6392
Short Title of Work:	GaAs A-to-D Converter
Contract Period Covered by Report:	1 October 1991—31 December 1991

17 January 1992

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I. SUMMARY

A. Brief Program Definition

This is a research and development program to design and fabricate both a GaAs high sampling rate A/D converter and a high-resolution GaAs A/D converter.

B. ADC Program Overview

The 12-bit ADC design has been completed and the photomask ordered. Processing is scheduled to start in January 1991. A no-cost extension of this contract to 31 August 1992 has been requested to complete processing and characterization of the 12-bit ADC.

II. PROGRESS REPORT

A. Process Development

The process traveler has been generated for the new 12-bit ADC design and starting material has been received.

B. Circuit Design/Testing

The 12-bit ADC design has been completed along with a timing generator required for testing the ADC. These designs have been integrated with the necessary Nikon stepper alignment marks and process monitors and photomasks have been ordered. Figure 1 illustrates the chip layout. In addtion to the 12-bit ADC and timing circuits, the 5-bit ADC previously processed and characterized has been included as a large process monitor. Two test circuits designed by TI have also been included on the chip. The final die size is 370 × 380 mil^2. Processing of the 12-bit ADC is scheduled to start in January 1992 with approximately 6 months anticipated to be required to complete processing.

C. Personnel Assignments

There have been no changes in personnel.

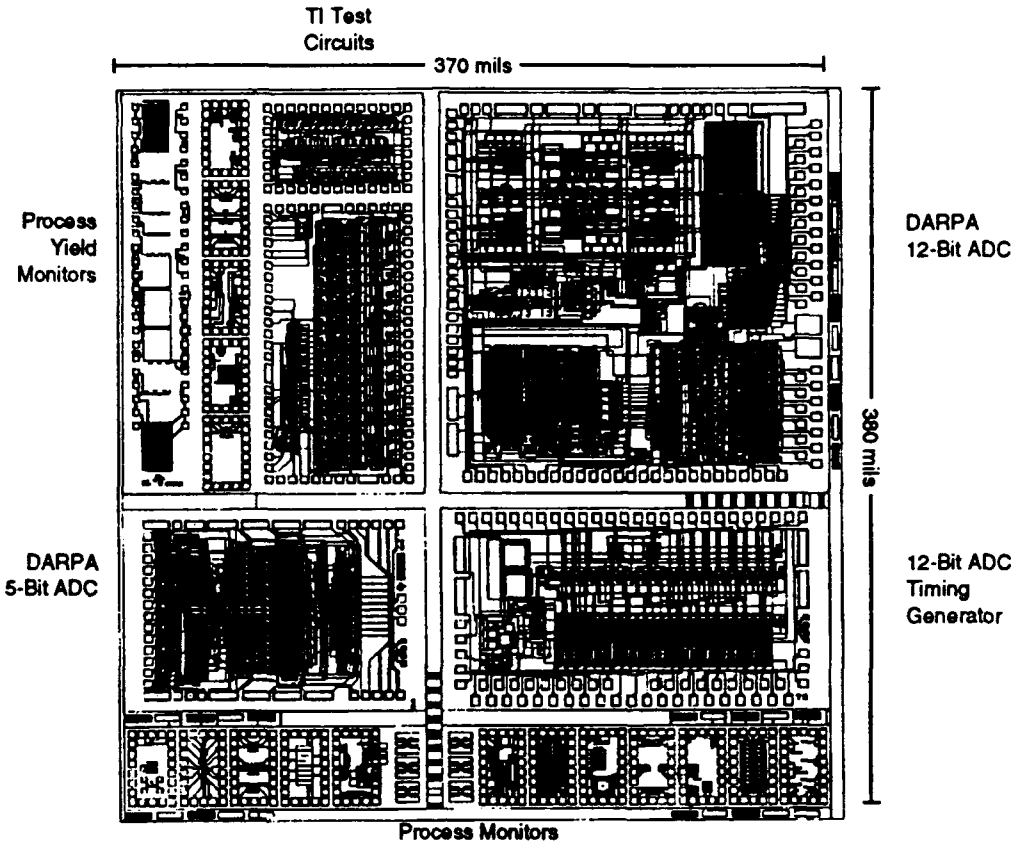

Figure 1. 12-bit ADC chip layout.

III. PLANS FOR NEXT QUARTER

Fabricate 12-bit ADC in the TI GaAs pilot line.

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